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encoded program streams to form the slotted transport stream, wherein each transport packet from a single program stream is separated by N-1 transport packets.

11. (amended) An apparatus for generating N programs, where N is an integer greater than one, to produce a slotted transport stream respectively having N slots, comprising:

a transport clock source CLK;

N transport encoders for respectively receiving said N programs and producing N program streams;

a frequency divider coupled between the transport clock source and the respective N transport encoders to divide a timing signal CLK from said transport clock source into N timing signals;

N buffer memories respectively coupled to said N transport encoders; and

a switch, selectively coupled to said N buffer memories for selectively coupling to an output, a packet from each of said N buffer memories, to produce said slotted transport stream, wherein each transport packet from a single program stream is separated by N-1 transport packets.

REMARKS

In this Final Office Action, claims 1-11 are pending, of which claims 1-11 stand rejected. By this amendment, claims 1, 7, and 11 have been amended and claims 2-6 and 8-10 continue unamended. In view of both the amendment presented above and the following discussion, the applicants submit that none of the claims now pending in the application are anticipated under the provision of 35 U.S.C. §102. Thus, the applicants believe that all of these claims are now in allowable form.

IN THE SPECIFICATION:

The applicants have amended the specification to change reference designations to conform to the reference designations in the drawings. In particular,

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reference designation "514" on page 11, line 9 of the specification has been changed to --512-- to conform to the reference designation in FIG. 5. Such reference designation change does not add any new subject matter to the application.

Rejections

A 35 U.S.C. § 102

1. Claims 1-11

The Examiner has rejected claims 1-11 under 35 U.S.C. § 102 as being anticipated by Slattery (U.S. Patent No. 6,246,701, issued June 12, 2001). The applicants respectfully traverse the rejection.

a) Claims 1-6

Claim 1, as amended, recites:

"In an MPEG information distribution system, a method for forming a transport stream having a bitrate BR and including one or more programs, said method comprising the steps of:

defining N slots within said transport stream, where N is an integer greater than one, each of said N slots being associated with a respective plurality of non-contiguous transport packets, each of said respective non-contiguous transport packets being separated by N-1 transport packets;

including, within said transport stream being formed, up to N transport encoded programs, where each transport encoded program is associated with one of said N slots and has a bitrate of BR/N; and

in the case of less than N transport encoded programs being included within said transport stream being formed, including NULL transport packets within said transport stream being formed, said NULL packets forming NULL programs within said transport stream being formed." (Emphasis added).

"Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim"

(Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984)(citing Connell v. Sears, Roebuck & Co., 722 F.2d

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1542, 220 USPQ 193 (Fed. Cir. 1983) (emphasis added)). The Slattery reference fails to disclose each and every element of the claimed invention, as arranged in the claim.

Slattery fails to disclose the limitation of "defining N slots within said transport stream, where N is an integer greater than one" and "including, within said transport stream being formed, up to N transport encoded programs, where each transport encoded program is associated with one of said N slots and has a bitrate of BR/N ." Furthermore, Slattery fails to disclose "where less than N transport encoded programs are included within the transport stream, NULL packets are alternately provided therein to form NULL programs."

Nowhere in the Slattery reference is there any teaching of "defining N slots within the transport stream, where N is greater than one, and associating a respective program stream with each slot." That is, the applicants' claim 1 recites that each of the N slots has associated with it, either data packets from an encoded program or a program containing NULL packets, but not both. Slattery is completely devoid of any teaching regarding the NULL packets forming NULL programs within the transport stream being formed.

Rather, the NULL packets of Slattery are simply used to adjust the bandwidth of a particular stream to compensate for overflow buffer condition or underflow buffer condition between the encoder and decoder. For example, "a particular picture may take an unexpectedly longer time to encode than previously anticipated, thereby causing a delay in production of the encoded video. Such time slots are filled with null transport packets" (see Slattery, Col. 40, lines 8-24).

This is completely different from the applicants' invention. In particular, the applicants' claim "each transport encoded program is associated with one of the N slots." Each of N information sub-stream within an information stream comprises a program (e.g., image information and related audio information such as a movie or television program) that is transport encoded according to a first clock (see Specification, page 5, lines 22-28). That is, each of the N encoded programs is associated with a particular time slot (see applicants' FIG. 1). In the case of less than

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N transport encoded programs being included within the transport stream being formed, NULL transport packets are included within the transport stream being formed, where the NULL packets form NULL programs within the transport stream being formed. Accordingly, each and every element of the claimed invention, arranged as in the claim, is not taught or suggested by the Slattery reference.

As such, the applicants submit that claim 1 is not anticipated under 35 U.S.C. §102 and is patentable thereunder. Furthermore, claims 2-6 depend, either directly or indirectly, from independent claim 1 and recite additional limitations thereof. As such and for the same reasons, the applicants submit that these dependent claims are not anticipated under 35 U.S.C. §102 and are patentable thereunder. Therefore, the applicants respectfully request that the rejections be withdrawn.

b) Claims 7-11

Claim 7 (and similarly claim 11), as amended, recites:

"An apparatus for generating N programs, where N is an integer greater than one, to produce a slotted transport stream respectively having N slots, comprising:

a transport clock source CLK;

N transport encoders for respectively receiving said N programs and producing N program streams;

a frequency divider coupled between the transport clock source and the respective N transport encoders to divide a timing signal CLK from said transport clock source into N timing signals; and

a multiplexer, coupled to an output of said N transport encoders, for sequentially multiplexing one transport packet from each respective transport encoded program streams to form the slotted transport stream, wherein each transport packet from a single program stream is separated by N-1 transport packets. (Emphasis added).

"Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim"

(Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co., Id. (emphasis

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added)). The Slattery reference fails to disclose each and every element of the claimed invention, as arranged in the claim.

Slattery fails to disclose the limitation of "a multiplexer, coupled to an output of the N transport encoders, for sequentially multiplexing one transport packet from each respective transport encoded program streams to form the slotted transport stream, wherein each transport packet from a single program stream is separated by N-1 transport packets." Slattery is completely devoid of any teaching of the arrangement of packets in the slotted transport stream. That is, nowhere in the Slattery reference is there any teaching that "each transport packet from a single program stream is separated by N-1 transport packets." Rather, Slattery merely discloses that "as a result of the remultiplexing operation of the remultiplexer 30, one or more TSs, namely TS4 and TS5, are outputted from the remultiplexer 30. The remultiplexed TSs TS4 and TS5 illustratively, include at least some information (at least one transport packet) from the inputted TSs TS1, TS2, and TS3." (See Slattery, Col. 12, lines 59-65, and FIG. 1). Accordingly, each and every element of the claimed invention, arranged as in the claim, is not taught or suggested by the Slattery reference, since there is no teaching of each transport packet from a single program stream is separated by N-1 transport packets.

As such, the applicants submit that claim 7 is not anticipated under 35 U.S.C. §102 and is patentable thereunder. Likewise, independent claims 11 recites similar limitations thereof. As such, the applicants submit that claim 11 is not anticipated under 35 U.S.C. §102 and is patentable thereunder. Furthermore, claims 8-10 depend, either directly or indirectly, from independent claim 7 and recite additional limitations thereof. As such and for at least the same reasons, the applicants submit that these dependent claims are not anticipated under 35 U.S.C. §102 and are patentable thereunder. Therefore, the applicants respectfully request that the rejections be withdrawn.

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Conclusion

Thus, the applicants submit that none of the claims, presently in the application, are anticipated under the provision of 35 USC § 102. Consequently, the applicants believe that all these claims are presently in condition for allowance. Accordingly, reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, it is requested that the Examiner telephone Mr. Eamon J. Wall, Esq. at (732) 530-9404 so appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

1/7/02

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